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GOVERNMENT OF KERALA

**REPORT**  
**ON**  
**CROP CUTTING SURVEY**  
**ON**  
**AUTUMN PADDY 1986-87**

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**DEPARTMENT OF ECONOMICS & STATISTICS**  
**TRIVANDRUM**  
**1987**

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## FOREWORD

Crop estimation surveys on paddy are being conducted by the Department regularly from 1950 onwards, separately for each crop season viz. Autumn (Virippu), Winter (Mundakan) and Summer (Punja). This report deals with the object, area covered by the survey, the sampling technique adopted, the results of the analysis of the data and the reliability of the result obtained from the survey on Autumn crop of paddy 1986-87.

This report was prepared by the Agricultural Statistics Division of the Department of Economics and Statistics.

Trivandrum,  
20-4-1987.

K. BALAKRISHNAN NAIR,  
*Director,*



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# REPORT ON THE CROP CUTTING SURVEY ON AUTUMN CROP OF PADDY—1986-87

## 1. Introduction

The Department of Economics and Statistics is regularly conducting yield estimation surveys on the most important food crop paddy in the State every year. The main objective of these sample surveys is to estimate the mean yield as well as the total production in the State. The survey is conducted separately during each of the three seasons viz. Autumn (Virippu), Winter (Mundakan) and Summer (Punja) in an year.

This report deals with the survey on the Autumn crop of paddy in the agricultural year 1986-87.

## 2. Objectives of the survey

The main objectives of the survey were:

1. To estimate the mean yield per hectare of dry paddy at the taluk, District and the State level for each season.
2. To estimate the mean yield per hectare of High Yielding Varieties of paddy at the District level.
3. To study the difference in yield of paddy according to various cultivation practices.

## 3. Period of the Survey

The period of the survey was from August 1986 to October 1986. The field work for the survey was conducted during the period in all the taluks where the crop was raised during the season.

## 4. Coverage

The survey was designed to cover the whole State except the forest area.

## 5. Sampling Design

For the conduct of the survey a stratified multistage random sampling design was adopted. Taluk was treated as stratum and revenue village selected for EARAS Survey as the first stage unit. Paddy growing survey sub-division in the village form the 2nd stage units. In each village list of survey sub-division numbers of wet and dry land plots growing paddy under High Yielding Variety irrigated, High Yielding Variety un-irrigated,

local irrigated and local unirrigated are prepared separately. In each taluk allocation of the number of experiments to be conducted in each season under each classification is made roughly in proportion to the area under paddy. From this list, the required number of second stage units are selected by simple random method. The Kandoms selected (one each in a survey sub-division) form the third stage units and a square plot of side 5 metres is taken as the ultimate sample unit. The number of experiments to be conducted in each season is fixed considering the area of the crop and the availability of Investigators. However, the number of experiments in a taluk is limited to 30, subject to a minimum of two experiments in a village. The sample villages were those selected for EARAS survey, at the beginning of the agricultural year.

Three samples each weighing 250 gms. of wet paddy were collected at the time of harvest from a taluk for conducting driage experiments. The first sample was taken at the beginning, the second towards the middle and the third towards the end of the harvest season.

## 6. Sample selection

The selection of plots in each Investigator unit was done by the Taluk Statistical Officer. For the selection of kandom, if the number of kandoms in the selected survey subdivision is more than one, the kandoms are serially numbered anticlock-wise direction from the south-west corner and select one kandom on simple random method to locate a square plot of side 5 metres. The Investigators in the field are attending to this work.

## 7. Field work

The field work of the survey was attended to by the Investigators under the immediate supervision of the Taluk Statistical Inspectors. The District Statistical Officers were also made responsible for the proper conduct and supervision of the field work of the survey. The Additional District Statistical Officers also conducted supervision of the field work.

The total number of crop cutting experiments planned in the State during Autumn 1986 was 1682 and the percentage response was 92.

## 8. Supervision

The inspection of the field work of the survey was done at three stages viz. pre-harvest, harvest and post-harvest stages by the Additional District Statistical Officers, District Statistical Officers and Deputy Directors. The Officers at the district level had to conduct harvest stage inspections at the rate of one experiment in each taluk. The Statistical Inspectors/Additional Statistical Inspectors had to conduct at least one harvest stage inspection in each Investigator unit, subject to a minimum of six experiments in a taluk. Harvest stage inspections were conducted during Autumn 1986 to the extent of 45% of the experiments analysed. The percentage inspection at the pre-harvest stage during the season was 22.

## 9. Analysis

The tabulation and analysis of data collected through the survey were done by the Agricultural Statistics division of the Directorate.

## 10. Procedure of Estimation

(i) *Mean Yield.*—The taluk-wise mean yield of dry paddy and its standard error were estimated using the following formula. Taluk-wise mean yield of paddy under the four fold classification.

$$\bar{X}_p = \frac{\sum_{i=1}^K n_i \sum_{j=1}^K X_{ij}}{\sum_{i=1}^K n_i} \quad \text{where}$$

$n_i$  — number of experiments conducted in the  $i$ th village  
( $i = 1, 2, 3, \dots, K$ )

$K$  — number of villages selected in the taluk.

$x_{ij}$  — weight of paddy obtained from the  $j$ th experiment in the  $i$ th village

$p = 1, 2, 3, 4$  and  $\bar{X}_1, \bar{X}_2, \bar{X}_3$  and  $\bar{X}_4$

respectively denote the taluk-wise mean yield of paddy under High Yielding Variety Irrigated, High Yielding Variety unirrigated, local irrigated and local unirrigated.

Each experiment is taken from a 5 metre square i.e.  $1/400$ th of a hectare. Mean yield of dry paddy in kg. per hectare =  $\bar{X}_p \times 400 \times d$  where  $d$  is the driage ratio.

The taluk-wise mean yield of dry paddy (for all varieties together) is obtained as the weighted average of the yield of paddy under each classification, the weights being the proportionate area under each classification in the taluk.

(ii) *Standard error of Taluk Mean Yield.*—Standard error of mean yield per hectare under  $p$ th classification for the  $i$ th taluk is calculated by using the formula

$$S_{ip} = \sqrt{\frac{\text{M.S.S.}}{n}} \times d \times 400$$

Where  $n$  is the number of experiments conducted in the plots under the  $p$ th classification,  $d$  is the driage ratio.

M.S.S. = Mean sum of squares

T.S.S.  
 $n-1$

T.S.S. =  $\sum xip^2 - \frac{(\sum xip)^2}{n}$

Where  $x_{ip}$  is the plot yield under  $p$ th classification in the  $i$ th taluk.

$$p = 1, 2, 3, 4$$

$Si_1, Si_2, Si_3$  and  $Si_4$  are the standard error of the  $i$ th taluk mean yield under High Yielding Variety irrigated, High Yielding Variety unirrigated local irrigated and local unirrigated. Then standard error of the  $p$ th taluk mean yield is

$$Si = \sqrt{\frac{\sum_{p=1}^4 (a_{ip} sip)^2}{\left[ \frac{4}{\sum_{p=1}^4 a_{ip}} \right]^2}} = \frac{1}{\sum a_{ip}} \sqrt{\sum (a_{ip} sip)^2}$$

Where  $a_{ip}$  is the area under paddy in the  $p$ th classification of the  $i$ th taluk.

(iii) *Standard error of the district and State mean yield:*—The formula adopted for the computation of the district mean yield and State mean yield is similar to the one used for the Taluk mean yield and is given by

$$SE = \sqrt{\frac{\sum (a_{isi})^2}{(\sum a_i)^2}}$$

$a_i$  is the area of the  $i$ th taluk and  $Si$  is the S.E. of the  $i$ th taluk mean yield in the case of computation of standard error of district mean yield and  $a_i$  is the area of the  $i$ th district and  $Si$ , SE of the  $i$ th district mean yield in the case of computation of standard error of the State mean yield.

To compute the production of rice the area under paddy in each taluk estimated through T.R.S. has been utilised.

The weight of clean rice is reckoned as 65.7% of dry paddy.

## 11. Results of the survey

*General.*—The total production of rice in the State during Autumn 1986 was estimated to be 468409 tonnes. The corresponding figure for the previous year was 461992 tonnes. The rice production in the State has gone up by about six thousand tonnes. This is mainly due to the increase in the area of paddy cultivation from 279699 hectares in Autumn 1985 to 286569 hectares in Autumn 1986.

The estimated area, mean yield and its standard error, production of rice together with the number of crop cutting experiments analysed in each taluk during Autumn 1986 are given in Table 1 in the appendix.

For facilitating comparison, the mean yield of paddy during the Autumn season in all the taluks and districts of the State during the last six years are given in table-2 in the appendix.

During the period, the lowest yield rate of 500 Kg. and less of wet paddy per hectare was obtained from about 7% of the experimental plots whereas about 10% of the experimental plots had the highest yield rate of above 4000 Kg/hectare. It was observed that about 43% of the experimental plot had yield rate of more than 2500 Kg./hectare.

With a view to find out the driage ratio of dry paddy to wet paddy, 171 driage experiments were conducted. The lowest driage ratio of 0.85 was obtained for Idukki District and the highest ratio of 0.93 for Malappuram District. The driage ratio for the State for Autumn 1986 was estimated to be 0.89.

## 12. High Yielding Varieties

Table 3 in the appendix shows the estimated area, mean yield and production of high yielding varieties and other varieties of paddy in each district and State during Autumn 1986. About 28% of the total area under paddy was brought under High Yielding Varieties. About 30% of the total out-turn of rice in the State during the season was from High Yielding Variety. The average yield of high yielding varieties for the State showed an increase of about 13% over other varieties. The district-wise yield rate of High Yielding Variety varied from 13,77 Kg./hect. in Wayanad District to 3821 Kg./Hect. in Palghat District.

About 36% of the experimental plot covered by the survey were grown with High Yielding Variety of paddy during Autumn 1986. High Yielding Variety of paddy in the order of cultivators preference was Jyothi, Jaya and Masoori. The highest State average yield of 4018 kg./hect. was from Asha, cultivated in Kottayam District. This was followed by 3305 kg/ hect. from 1285 and 3183 Kg./hect. from MO5.

The names of High Yielding Variety of paddy corresponding to the highest district average together with the highest mean yield and the number

of experimental plots where the crop was raised in each district during Autumn 1986 are indicated in the table given below:

**District - wise High Yielding Variety with highest average Yield—  
Autumn 1986**

<i>Sl. No.</i>	<i>District</i>	<i>HYV corresponding to the highest District average</i>	<i>Highest average yield of dry paddy (Kg. Hect)</i>	<i>No. of experimental plots where HYV in col. 3 is raised</i>
(1)	(2)	(3)	(4)	(5)
1.	Trivandrum	H4	4426	2
2.	Quilon	Aswathi	3602	1
3.	Pathanamthitta	Culture 28	3771	4
4.	Alleppey	MO5	3615	1
5.	Kottayam	Asha	4018	2
6.	Idukki	I.R.8	3982	2
7.	Ernaulam	Jaya	2776	11
8.	Tyngchur	Bharathi	3976	1
9.	Palighat	Jaya	4358	17
10.	Malappuram	Jaya	3271	5
11.	Kozhikode	I.R.8	2781	3
12.	Wayanad	..	..	..
13.	Cannanore	Aswathi	3624	1
14.	Kasargode	Jaya	4783	6

The highest district averages was obtained for Jaya in Kasargode District followed by H4 in Trivandrum District and Jaya in Palghat District. Jaya attained the highest district average in 4 districts while Aswathi and I.R.8 in two districts each.

## Cultivation Practices

Autumn crop of paddy is considered to be mainly a rain fed crop. But irrigation is usually resorted to pre-sowing field operations of Autumn crop in certain parts of the State depending upon the availability of the rain. It was reported that 16% of the experimental plots were irrigated during Autumn 1986. Chemical fertilizers were applied to about 98% of the irrigated plots. 2% of the irrigated plots were provided with other types of manures like farm yard manure, green manure, compost manure etc. The percentage of irrigated plots left unmanured during the season was negligible.

As far as unirrigated plots were concerned, nearly 78% of them were found to have been applied with chemical fertilizers; other manures were applied to about 14% of the plots and the remaining 8% of the plots received no manure of any sort.

It was reported that crops in about 42% of the experimental plots were treated with insecticides and pesticides though there was no report of severe attack of pests and diseases from any part of the State during the season under reference.

In the case of plots where high yielding varieties were grown, it was found that about 13% of them received irrigation during Autumn 1986. All the irrigated plots with High Yielding Varieties have been brought under chemical fertilizers. About 95% of these unirrigated plots with high Yielding Variety was also found to have received chemical fertilizers while other manures were applied to about 3% of the unirrigated plots with H.Y.V. However, about 2% of the unirrigated plots with H.Y.V. received no manure during Autumn 1986.

Though there was no report of disease or pest attack of considerable nature on the H.Y.V. crops in the State, it was found that about 56% of the H.Y.V. plots were treated with pesticides or insecticides during the season under reference.

The estimated average yield of High Yielding and other varieties of paddy in irrigated and unirrigated plots, manured and unmanured plots and plots treated and untreated with insecticides and pesticides together with the number of experiments obtained in the survey under each of these categories in respect of Autumn crop of Paddy 1986 are given in Table 4 in the appendix.

TABLE 1

Taluk-wise estimates of Area, Mean Yield and Production of Rice  
Autumn—1986

Sl. No.	Taluk and District	No. of experiments		Area in Heclares	Mean yield of dry paddy Kg./Hect.	Standard error	Production in tonnes
		(3) Planned	(4) Analysed				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Neyyattinkara	35	25	3167	3719	184	7738
2.	Trivandrum	30	29	2544	2670	222	4463
3.	Nedumangad	30	29	2923	2340	182	4493
4.	Chirayinkil	30	28	3764	2556	73	6322
	TRIVANDRUM DISTRICT	125	111	12398	2826	81	23016
5.	Quilon	30	30	2886	1931	134	3661
6.	Kottarakkara	35	34	5385	2761	114	9770
7.	Kunnathur	20	20	1344	2302	212	2033
8.	Pathanapuram	30	30	3606	3156	170	7477
9.	Karunagappally	30	30	2611	1992	83	3417
	QUILON DISTRICT	145	144	15832	2534	64	26358
10.	Kozhencherry	16	16	1267	3065	153	2551
11.	Ranni	16	16	124	2891	217	296
12.	Adoor	20	20	1847	2213	270	2686
13.	Thiruvalla	16	16	1274	1220	267	1021
14.	Mallappally	20	20	491	1383	300	446
	PATHANAMTHITTA DISTRICT	88	88	5003	2111	130	6940
15.	Karthigappally	30	30	3193	1811	132	3799
16.	Mavelikara	25	23	4516	1562	179	4633
17.	Chengannur	29	29	1944	2053	162	2622
18.	Kuttanad	30	29	14131	1490	312	13831
19.	Ambalapuzha	30	29	1295	1358	259	1155
20.	Sherthallai	30	29	3922	886	142	2284
	ALLEPPEY DISTRICT	174	169	29001	1487	157	28324



21. Changanacherry	20	1278	1736	207	1458
22. Kanjirappally	16	76	3545	177	177
23. Kottayam	30	5386	2441	284	8957
24. Vaikom	35	4036	2440	181	6469
25. Meenachil	29	1768	2810	202	3264
<b>KOTTAYAM DISTRICT</b>	130	12744	2428	142	20325
26. Peermade	16	9	3573	246	2000
77. Devikulam	16	852	3512	30	30
28. Udumbanchola	16	13	3338	205	4629
29. Thodupuzha	24	2111	3406	161	6659
<b>IDUKKY DISTRICT</b>	72	2976			
30. Kothamangalam	35	3059	2739	118	5504
31. Muvattupuzha	30	3884	3309	149	8443
32. Cochin	20	1911	1539	84	1933
33. Kanayannur	30	3373	2206	146	4889
34. Kunnathunad	35	9375	2465	144	15181
35. Alwaye	35	8207	2151	283	11599
36. Parur	30	3556	2108	124	4926
<b>ERNAKULAM DISTRICT</b>	215	33365	2394	86	52475
37. Cranganore	16	463	971	204	295
38. Mukundapuram	35	8351	2343	207	12853
39. Trichur	30	6185	2315	167	9406
40. Thalappally	35	14109	2355	207	21827
41. Chowghat	30	580	1756	170	669
<b>TRICHUR DISTRICT</b>	146	29688	2310	120	45050
42. Chittur	35	22203	3843	193	56061
43. Alathur	35	18549	4226	236	51507
44. Palghat	35	19324	2628	215	33362
45. Otappalam	30	17994	1908	170	22552
46. Mannarghat	30	4375	1789	88	5730
<b>PALGHAT DISTRICT</b>	165	82945	3105	97	169212

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
47.	Perinthalmanna	30	30	6505	2795	180	11947
48.	Ponnani	30	30	2911	2239	130	4283
49.	Tirur	30	29	6392	1683	128	7290
50.	Ernad	35	34	11239	2151	149	15886
	MALAPPURAM DISTRICT	125	123	27247	2201	82	39406
51.	Kozhikode	30	29	2059	1417	101	1917
52.	Quilandy	30	29	1874	1187	120	1461
53.	Badagara	24	23	1074	1587	205	1120
	KOZHIKODE DISTRICT	84	81	5007	1367	75	4498
54.	Vythiri	16	..	3	1377	..	3
55.	Sultan's Battery	16	..	16	1377	..	<del>1411</del> 14
56.	Mananthavady	16	..	3	1377	..	3
	WAYANAD DISTRICT	48	..	22	1377	..	20
57.	Tellicherry	30	29	4190	1800	86	4954
58.	Cannanore	30	30	6760	2543	203	11294
59.	Taliparamba	35	35	6293	2312	155	9557
	CANNANORE DISTRICT	95	94	17243	2278	100	25805
60.	Hosdurg	35	35	6446	2164	181	9166
61.	Kasargode	35	35	6652	2552	188	11155
	KASARAGODE DISTRICT	70	70	13098	2361	131	20321
	STATE	1682	1545	286569	2488	39	468409

TABLE 2

Taluk-wise Estimates of Mean Yield of dry paddy (Kg./Hect) during Autumn Season from 1981 to 1986

Sl.No.	Taluk and District	1981	1982	1983	1984	1985	1986
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Neyyattinkara	2312	2640	2671	2887	3430	3719
2.	Trivandrum	2075	2500	2214	3084	3293	2670
3.	Nedumangad	2123	2093	2201	2705	2541	2340
4.	Chirayinkil	2005	2497	2255	2516	3441	2556
	TRIVANDRUM DISTRICT	2129	2419	2338	2761	3188	2826
5.	Quilon	1680	1858	1768	2003	1884	1931
6.	Kottarakkara	2844	2883	2387	2394	3490	2761
7.	Kunnathur	2743	2659	1681	1716	2172	2302
8.	Pathanapuram	2888	3525	3239	2945	3452	3156
9.	Pathanamthitta	2600	2820	3174	..	..	..
10.	Karunagappally	1612	2643	2410	1754	2078	1992
	QUILON DISTRICT	2425	2715	2344	2219	2833	2534
11.	Kozhencherry	..	..	..	2859	2662	3065
12.	Ranni	..	..	..	3224	2781	2691
13.	Adoor	..	..	..	3031	2132	2213

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
14.	Thiruvalla	..	..	..	2336	1841	1220
15.	Mallappally	..	..	..	2464	1756	1383
	PATHANAMTHITTA DISTRICT						
16.	Karthigappally	2236	1971	2822	1967	806	1811
17.	Mavelikara	1669	2090	2522	1742	1575	1562
18.	Chengannur	1903	2872	2927	2090	2310	2053
19.	Thiruvalla	1817	2577	2550	..	..	..
20.	Kuttanad	3543	2902	2238	4297	2525	1490
21.	Ambalapuzha	1988	630	3593	1999	2143	1358
22.	Sherthallai	1695	1140	1214	1544	725	886
	ALLEPPEY DISTRICT						
23.	Changanacherry	2403	2153	2464	2866	1492	1487
24.	Kanjirappally	2108	3443	2708	2749	2044	1736
25.	Kottayam	3475	2854	3905	2202	2558	3545
26.	Vaikom	3421	3361	3980	3287	2178	2441
27.	Meenachil	3075	3401	3314	3768	1298	2440
	KOTTAYAM DISTRICT						
28.	Peermade	2205	2888	2488	2784	2702	2810
29.	Devicoolam	2967	3300	3391	3295	1881	2428
		2664	3044	..	..	..	..
		2916	4498	2180	2526	3062	3573

30. Udumbanchola	2828	2995	..	2516	3064	3512
31. Thodupuzha	2532	3157	3712	3327	3042	3338
Ivicki District						
32. Kothamangalam	2649	3603	2529	3071	3049	3406
33. Muvattupuzha	2308	2621	2619	2881	2539	2739
34. Cochin	2819	3258	2998	2894	2931	3309
35. Kanayannur	2262	2453	1844	1755	2199	1539
36. Kunnathumad	1553	1593	2235	1995	2128	2206
37. Alwaye	2089	2371	1885	2517	2583	2465
38. Parur	2148	2620	2404	2892	2939	2151
39. Cranganore	2041	2248	1169	2276	2391	2108
40. Mukundapuram	2169	2485	2172	2573	2625	2394
ERNAKULAM DISTRICT						
41. Trichur	825	1420	905	358	657	971
42. Thalappally	1356	2135	2174	2002	2112	2343
43. Chowghat	1992	2359	2392	1893	1787	2315
44. Chittur	2000	1913	2173	1849	1992	2355
45. Alathur	1517	1066	1811	1010	1600	1756
TRICHUR DISTRICT						
46. Chittur	1719	1966	2144	1823	1951	2310
47. Alathur	4572	4549	3791	4648	3601	3843
48. Alathur	3841	4150	3748	4006	3378	4226

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
46.	Palghat	3503	3933	2956	3474	2956	2628
47.	Ottappalam	2135	2079	1989	2137	2146	1908
48.	Mannarghat	2157	2035	1836	1887	1810	1789
	PALGHAT DISTRICT	3440	3560	3040	3455	3058	3105
49.	Perinthalmanna	2101	1909	1883	2143	1798	2795
50.	Ponnani	1694	2053	1912	1841	2063	2239
51.	Tirur	1563	1444	1729	1816	1595	1683
52.	Ernad	1871	1636	1619	1938	2072	2151
	MALAPPUZHA DISTRICT	1820	1687	1726	1945	1906	2201
53.	Kozhikode	1574	1380	1490	1329	1882	1417
54.	Quilandy	1270	1315	1393	1421	1110	1187
55.	Badagara	1157	1584	1242	863	2039	1587
56.	South Wayanad	1286	..	..	..	..	..
	KOZHIKODE DISTRICT	1378	1405	1406	1259	1661	1367
57.	Vythiri	..	1377	..	..	..	1377
58.	Sultan's Battery	..	..	..	1377	1377	1377
59.	Mananthavady	..	1377	..	..	..	1377
	WAYANAD DISTRICT	..	1377	..	1377	1377	1377

## 60. North Waynad

1286	1887	1954	1634	1478	2401	1800
61. Tellicherry	1887	1954	1634	1478	2401	1800
62. Cannanore	2179	2191	1926	1952	2409	2543
63. Taliparamba	1508	1800	2041	1693	2251	2312
64. Hosdurg	2339	2326	2205	1969	2120	2164
65. Kasargode	2100	2112	2213	2376	2873	2552
CANNANORE DISTRICT	1989	2071	2027	1935	2408	2278
STATE	2442	2571	2417	2623	2514	2488

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District-wise Estimated Area, Mean Yield and Production of High Yielding and Other Varieties of Paddy—Autumn 1986-87

District/State	High Yielding Varieties				Other Varieties				All Varieties	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Area (Hect)	Mean yield of dry paddy (Kg./Hect.)	Production of Rice (in tonnes)	Area (Hect.)	Mean yield of dry paddy (Kg./Hect.)	Production of Rice (in tonnes)	Area (Hect.)	Mean yield of dry paddy (Kg./Hect.)	Production of Rice (in tonnes)	
Trivandrum	1478	3219	3126	10920	2772	19890	12398	2826	23016	
Quilon	11968	2752	21636	3864	1860	4722	15832	2534	26358	
Pathanamthitta	2189	2306	3317	2814	1960	3623	5003	2111	6940	
Alleppey	11055	1659	12052	17946	1380	16272	29001	1487	28324	
Kottayam	9183	2480	14960	3561	2293	5365	12744	2428	20325	
Idukki	557	3714	1359	2419	3335	5300	2976	3406	6659	
Ernakulam	9918	2441	15908	23447	2374	36567	33365	2394	52475	
Trichur	5436	2590	9249	24252	2247	35801	29688	2310	45050	
Palghat	14232	3821	35728	68713	2957	133484	82945	3105	169212	
Malappuram	4205	2606	7200	23042	2130	32206	27247	2201	39406	
Kozhikode	929	1684	1028	4078	1295	3470	5007	1367	4498	
Wayanad	8	1377	7	14	1377	13	22	1377	20	
Gannanore	6893	2758	12488	10350	1958	13317	17243	2278	25805	
Kasargode	2025	3583	4767	11073	2138	15554	13098	2361	20321	
STATE	80076	2715	142825	206493	2400	325584	286569	2488	468409	



TABLE 4

## District-wise yield for High Yielding varieties of Paddy according to Cultural Practices—Autumn 1986

District	Irrigated											
	Chemically manured					Other manured					Not manured	
	No. of expt.	Yield (2)	(3)	Mean yield (4)	No. of expt. (5)	Yield (6)	Mean Yield (7)	No. of expt. (8)	Yield (9)	Mean yield (10)		
(1)												
Trivandrum	HYV	2	24.37	4426	..	..	..	..	..	..		
	Local	34	319.13	3409	..	..	..	..	..	..		
	Total	36	343.50	3466	..	..	..	..	..	..		
Quilon	HYV	2	14.26	2481	..	..	..	..	..	..		
	Local	1	5.27	1834	..	..	..	..	..	..		
	Total	3	19.53	2265	..	..	..	..	..	..		
Pathanamthitta	HYV	..	..	..	..	..	..	..	..	..		
	Local	..	..	..	..	..	..	..	..	..		
	Total	..	..	..	..	..	..	..	..	..		
Alleppey	HYV	..	..	..	..	..	..	..	..	..		
	Local	..	..	..	..	..	..	..	..	..		
	Total	..	..	..	..	..	..	..	..	..		
Kottayam	HYV	7	65.89	3381	..	..	..	..	..	..		
	Local	9	79.09	3157	..	..	..	..	..	..		
	Total	16	144.98	3255	..	..	..	..	..	..		
Idukki	HYV	3	29.25	3311	..	..	..	..	..	..		
	Local	3	28.72	3251	..	..	..	..	..	..		
	Total	6	57.97	3281	..	..	..	..	..	..		

TABLE 4—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ernakulam	HYV	31	239.84	2770	..	..	..	..	..
	Local	50	360.27	2580	..	..	..	..	..
	Total	81	600.11	2652	2	15.00	2685	..	..
Trichur	HYV	7	45.64	2363	..	..	..	..	..
	Local	15	85.55	2067	..	..	..	..	..
	Total	22	131.19	2161	2	14.73	2669	1	4.20
Palghat	HYV	13	152.80	4269	..	..	..	..	..
	Local	54	559.45	3763	..	..	..	..	..
	Total	67	712.25	3861	..	..	..	..	..
Malappuram	HYV	3	31.10	3844	..	..	..	..	..
	Local	6	52.25	3229	..	..	..	..	..
	Total	9	83.35	3434	..	..	..	..	..
Kozhikode	HYV	..	..	..	..	..	..	..	..
	Local	..	..	..	..	..	..	..	..
	Total	..	..	..	..	..	..	..	..
Wayanad	HYV	..	..	..	..	..	..	..	..
	Local	..	..	..	..	..	..	..	..
	Total	..	..	..	..	..	..	..	..
Gannanore	HYV	1	8.27	2812	..	..	..	..	..
	Local	1	8.95	1344	..	..	..	..	..
	Total	2	12.22	2077	..	..	..	..	..
Kasargode	HYV	2	17.75	3248	..	..	..	..	..
	Local	..	..	..	..	..	..	..	..
	Total	2	17.75	3248	..	..	..	..	..
STATE	HYV	71	629.17	3169	..	..	..	..	..
	Local	173	1493.68	3083	4	29.73	2658	2	10.40
	Total	244	2122.85	3111	4	29.73	2658	2	10.40

District	Un-Irrigated									
	Total			Chemically manured			Other manured			(19)
	No. of expt.	Yield	Mean Yield	No. of expt.	Yield	Mean Yield	No. of expt.	Yield	Mean Yield	
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)		
Trivandrum	HYV	2 24.37	4426	11 88.15	2911	..	..	..	..	
	Local	34 319.13	3409	57 369.07	2352	..	..	..	..	
	Total	36 343.50	3466	68 457.22	2442	..	..	..	..	
Quilon	HYV	2 14.26	2481	93 722.50	2704	1	6.30	2192	..	
	Local	1 5.27	1834	43 235.06	1902	4	18.71	1628	..	
	Total	3 19.53	2265	136 957.56	2450	5	25.01	1741	..	
Pathamthitta	HYV	.. ..	..	52 323.04	2236	..	..	..	..	
	Local	.. ..	..	35 189.29	1947	..	..	..	..	
	Total	.. ..	..	87 512.33	2120	..	..	..	..	
Alleppey	HYV	.. ..	..	69 334.46	1695	..	..	..	..	
	Local	.. ..	..	74 315.65	1491	16	28.34	619	..	
	Total	.. ..	..	143 650.11	1589	16	28.34	619	..	
Kottayam	HYV	7 65.89	3381	59 423.42	2578	..	..	..	..	
	Local	9 79.09	3157	45 291.06	2323	1	4.30	1545	..	
	Total	16 144.98	3255	104 714.48	2468	1	4.30	1545	..	
Idukki	HYV	3 29.25	3311	6 65.67	3717	..	..	..	..	
	Local	3 28.72	3251	19 198.44	3547	1	1.68	571	..	
	Total	6 57.97	3281	25 264.11	3588	1	1.68	571	..	
Ernakulam	HYV	31 239.94	2770	34 227.40	2394	..	..	..	..	
	Local	52 375.27	2584	48 281.84	2102	1	0.40	143	..	
	Total	83 615.11	2653	82 509.24	2223	1	0.40	143	..	

(1)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
Trichur	HYV	7	45.64	2363	34	212.90	2269	2	20.57	3727
	Local	18	104.48	2104	43	274.96	2317	17	82.16	1751
	Total	25	150.12	2176	77	487.86	2296	19	102.73	1959
P: 11:	HYV	13	152.80	4269	17	156.85	3351	2	19.06	3461
	Local	55	565.65	3735	41	316.67	2805	29	141.04	1766
	Total	68	718.45	3837	58	473.52	2965	31	160.10	1876
Malappuram	HYV	3	31.10	3844	20	137.15	2543	1	6.29	2332
	Local	6	52.25	3229	49	279.54	2115	38	226.08	2206
	Total	9	83.35	3434	69	416.69	2239	39	232.37	2209
Kozhikode	HYV	..	..	..	15	76.62	1863	2	8.30	1514
	Local	..	..	..	29	121.50	1528	29	92.68	1166
	Total	..	..	..	44	198.12	1643	31	100.98	1183
Wayanad	HYV	..	..	..	..	No Autumn Paddy	..	..	..	
	Local	..	..	..	..	..	..	..	..	
	Total	..	..	..	..	..	..	..	..	
Cannanore	HYV	1	8.27	2812	32	257.38	2735	4	23.02	1957
	Local	1	3.95	1343	32	199.79	2123	20	92.70	1576
	Total	2	12.22	2077	64	457.17	2429	24	115.72	1639
Kasargode	HYV	2	17.75	3248	12	125.19	3818	2	22.40	4099
	Local	..	..	..	41	241.70	2158	11	60.11	2000
	Total	2	17.75	3248	53	366.89	2534	13	82.51	2323
STATE	HYV	71	629.17	3169	454	3150.73	2482	14	105.94	2706
	Local	179	1538.81	3064	556	3314.57	2132	167	748.2	1602
	Total	250	2162.98	3094	1010	6465.30	2289	181	854.14	1638

## Unirrigated

District	Not manured			Total			Treated with pesticides			Not treated with pesticides			Pesticides			
	No. of expt.	Yield	Mean yield	No. of expt.	Yield	Mean yield	No. of expt.	Yield	Mean yield	No. of expt.	Yield	Mean yield	No. of expt.	Yield	Mean yield	
(1)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(28)	(29)	(30)	(31)
Trivandrum	HYV	4	30.24	2746	15	118.39	2867	13	109.01	4	33.75	3065	3046	4	33.75	3065
	Local	3	18.65	2258	60	387.72	2347	29	221.49	2774	65	485.36	2712	65	485.36	2712
	Total	7	48.89	2537	75	506.11	2450	42	330.50	2858	69	519.11	2732	69	519.11	2732
Quilon	HYV	..	..	..	94	728.80	2698	32	199.74	2172	64	543.32	2954	64	543.32	2954
	Local	..	..	..	47	253.77	1879	11	60.07	1900	37	198.97	1971	37	198.97	1971
	Total	..	..	..	141	982.57	2425	43	259.81	2103	101	742.29	2558	101	742.29	2558
Pathanamthitta	HYV	..	..	..	52	323.04	2236	43	279.89	2343	9	43.15	1726	9	43.15	1726
	Local	1	1.82	655	36	191.11	1911	16	98.22	2210	20	92.89	1672	20	92.89	1672
	Total	1	1.82	655	88	514.15	2103	59	378.11	2307	29	136.04	1689	29	136.04	1689
Alleppey	HYV	..	..	..	69	334.46	1695	53	251.70	1660	16	82.76	1808	16	82.76	1808
	Local	10	30.98	1083	100	374.97	1311	40	201.99	1765	60	172.98	1008	60	172.98	1008
	Total	10	30.98	1083	169	709.43	1468	93	453.69	1705	76	255.74	1176	76	255.74	1176
Kottayam	HYV	1	0.60	0	60	423.42	2535	62	463.16	2685	5	26.15	1879	5	26.15	1879
	Local	..	..	..	46	295.36	2306	48	317.07	2373	7	57.38	2944	7	57.38	2944
	Total	1	0.60	0	106	718.78	2436	110	780.23	2548	12	83.53	2500	12	83.53	2500
Idukki	HYV	..	..	..	6	65.67	3717	3	32.27	3653	6	62.65	3546	6	62.65	3546
	Local	..	..	..	20	200.12	3398	19	196.83	3518	4	32.01	2718	4	32.01	2718
	Total	..	..	..	26	265.79	3472	22	229.10	3536	10	94.66	3215	10	94.66	3215
Ernakulam	HYV	..	..	..	34	227.40	2394	46	320.03	2491	19	147.21	2774	19	147.21	2774
	Local	44	288.00	2343	93	570.24	2195	66	478.92	2598	79	466.59	2114	79	466.59	2114
	Total	44	288.00	2343	127	797.64	2248	112	798.95	2554	98	613.80	2242	98	613.80	2242

	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	
Trichur	HYV	3	12.69	1533	39	246.16	2287	20	104.67	1897	26	187.13	2608
	Local	14	41.40	1072	74	398.82	1982	24	164.73	2487	68	338.27	1803
	Total	17	54.09	1153	113	644.68	2068	44	269.40	2219	94	525.40	2026
Palghat	HYV	..	..	..	19	175.91	3363	10	103.21	3749	22	225.50	3723
	Local	6	19.82	1200	76	477.53	2282	21	196.64	3401	110	846.54	2795
	Total	6	19.82	1200	95	653.44	2498	31	299.85	3513	132	1072.04	2950
Malappuram	HYV	..	..	..	21	143.44	2533	10	68.35	2534	14	106.19	2813
	Local	6	19.97	1234	93	525.59	2096	36	199.02	2050	63	378.82	2230
	Total	6	19.97	1234	114	669.03	2176	46	267.37	2155	77	485.01	2336
Kozhikode	HYV	1	1.81	660	18	86.73	1758	8	52.34	2387	10	34.39	1255
	Local	5	11.28	823	63	225.46	1306	9	42.49	1722	54	182.97	1236
	Total	6	13.09	796	81	312.19	1406	17	94.83	2035	64	217.36	1239
Waynad	HYV	..	..	..	..	..	..	..	..	..	..	..	..
	Local	..	..	..	..	..	..	..	..	..	..	..	..
	Total	..	..	..	..	..	..	..	No Autumn Paddy	..	..	..	..
Cannanore	HYV	1	7.86	2672	37	288.26	2649	5	35.24	2396	33	261.29	2692
	Local	3	22.71	2574	55	315.20	1949	12	70.50	1998	44	248.65	1921
	Total	4	30.57	2598	92	603.46	2230	17	105.74	2115	77	509.94	2252
Kasargode	HYV	..	..	..	14	147.59	3858	4	30.09	2753	12	135.25	4125
	Local	2	10.89	1993	54	312.70	2119	12	70.79	2159	42	241.91	2108
	Total	2	10.89	1993	68	460.29	2447	16	100.88	2308	54	377.16	2556
STAZE	HYV	10	52.60	1881	478	3309.27	2476	309	1049.70	2372	240	1888.74	2814
	Local	94	465.52	1771	817	4528.29	1982	343	2318.76	2417	653	3743.34	2050
	Total	104	518.12	1781	1295	7837.56	2164	652	4368.46	2396	893	5632.08	2255



